Constructional idioms as products of linguistic change: the *aan het* + INFINITIVE construction in dutch

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1.   Introduction

It is an essential insight of grammaticalization theory that grammaticalization does not affect words in isolation, but words in specific syntactic constructions (Heine, Claudi, and Hünnemeyer 1991; Heine 1993; Bybee, Perkins, and Pagliuca 1994; Kuteva 2001; Traugott 2003 this volume; Petré and Cuyckens this volume). For instance, the developments of postural verbs into auxiliaries of progressive aspect takes place in constructions of the type verb + complement that develop into constructions of the type progressive marker + main verb.

In this paper I will focus on one particular progressive construction in Dutch, the *aan het* + INFINITIVE 'at the V-ing'construction, and I will argue that a detailed analysis of this construction will give us more insight into the rise of constructional idioms, and hence into the nature of grammaticalization processes. My use of the notion "construction" in this paper is a pretty informal one. It refers to a pattern of words with a partially non-compositional meaning, and a special syntactic distribution.

In European languages we find mainly two sources of progressive constructions (Bertinetto, Ebert, and de Groot 2000): combinations of a postural verb with a main verb, and locative constructions.

Instantiations of the first type of construction in Dutch are combinations of the verb *zitten* 'to sit' with an action verb, as in (1):

(1)   a. *Jan   zit   te   zeur-en / *Jan zit zeur-en*
          John   sits   to   nag-INF / John sits nag-INF
          'John is nagging'
       b. *Jan   heeft   zitt-en   te   zeur-en / Jan heeft zitt-en zeur-en*
          John   has   sit-INF   to   nag-INF / John has sit-INF nag-INF
          'John has been nagging'
       c. *Jan   begint   te   zitt-en   zeur-en / *Jan begint te zitt-en te zeur-en*
          John   begins   to   sit-INF   nag-INF / John begins to sit-INF to nag-INF
          'John starts nagging'

As the examples in (1) illustrate, the meaning of *zitten* has bleached into a more abstract meaning: it does not imply that John is actually sitting. These examples may serve to illustrate the formal complexities of such constructions: in the present tense (1a) and in combination with verbs such as *beginnen* 'to begin' (1c), the particle *te* must be present, whereas it is optional in the perfect tense (1b). In (1b) we also see the Infinitivus-Pro-Participio-effect: instead of the expected perfect participle *gezeten*, the infinitive *zitten* has to be used. Finally, the appearance of *te* after *zitten* in (1c) leads to ungrammaticality.

Postural verbs are used as progressive markers in languages across the world (cf. Newman 2002), for instance in a number of Germanic languages (cf. Ebert 2000 for a survey), among them Afrikaans, Middle Dutch, Standard Modern Dutch (Van Pottelberge 2002; Lemmens 2002, 2005), and West-Flemish (Leys 1985).

The other type of progressive marking, the locative construction, can be illustrated by the following example of Dutch:

(2)   *Jan   is   aan   het   fiets-en*
       John   is   at   the   cycle-INF
       'John is cycling'

The word sequence *aan het fietsen* has the form of a PP: the preposition *aan* 'at', followed by the definite determiner for neuter nouns *het* and the infinitive, a verbal form with nominal properties such as having neuter gender, and being able to function as the head of an NP. This is therefore another case of grammaticalization on the basis of a particular construction: the sequence *aan het* has developed into a progressive marker for the verb, which is functioning as the main verb, as we will see below. In present-day Dutch the preposition *aan* 'at' can be used as a locative preposition in restricted contexts only. For instance, unlike English *at* and German *an* (contracted with the determiner to *am*), it cannot be used unrestrictedly in a simple locative expression:

(3)   Dutch: *Jan is *aan/ op het station*
       English: John is at the station
       German: Johann ist am Bahnhof

It can be used for expressing some types of location, and with some process nouns, such as *werk* 'work', as in

(4)   a. *Jan   zit   aan   de   tafel*
            John   sits   at   the   table
       b. *Jan   is   aan   het   werk*
            John   is   at   the   work
            'John is working'

However, most process nouns do not allow for *aan* as their governing preposition, as illustrated by the ungrammaticality of the following sentence:

(5)   a. **Jan   is   aan   de   bespreking   van   het   probleem*
            John is   at   the discussion   of   the problem
            'John is discussing the problem'
       b. *Jan   is   bezig   met   de   bespreking   van   het   problem*
            John is   busy   with the   discussion   of   the   problem
            'John is discussing the problem'

These observations show that the occurrence of *aan* in present-day standard Dutch is bound to PPs with specific types of NPs, such as NPs of the type *het* + INFINITIVE. This use of *aan* is a reflex of an earlier stage of Dutch in which the preposition *aan* had a more elaborated use as locative preposition. For instance, in 17th century Dutch it was possible to say *aan deze plaats* 'at this place', whereas nowadays the phrase *op deze plaats* has to be used instead with the preposition *op*. These facts are obviously in line with the status of constructional idiom of the *aan het* + INFINITIVE construction. Combined with the observation that the progressive meaning of such constructions is not a predictable, compositional one, this justifies the classification of this type of syntactic pattern as a construction.

As pointed out by Bybee and Dahl (1989: 78–82), and by Bybee, Perkins, and Pagliuca (1994), the use of the verb *to be* plus a PP with an originally locative meaning for the expression of action in progress is widespread cross-linguistically. As was the case for postural verbs, the locative construction is used for progressive aspect in quite a range of genetically related and unrelated languages. For instance, it is found in a vast number of African languages (Heine 1993), in French (*être en train de*), and in a number of Germanic languages such as Dutch (Haeseryn et al 1997), the Low-Saxon dialect of Ruinen (Sassen 1953), Frisian (Dyk 1997), Afrikaans (Ponelis 1979), and certain dialects of German (Krause 2002) such as the Cologne dialect, where it is a relatively recent innovation (Kuteva 2001). In standard Dutch, this use of *aan het* + INFINITIVE dates back to at least the 17th century (as a search of the historical dictionary of Dutch, the *Woordenboek der Nederlandse Taal* reveals), and it belongs to the standard language, whereas it is not considered as standard language for High German yet. The following two examples are from Afrikaans (Ponelis 1979: 224–225) and Cologne German (Kuteva 2001: 30–35) respectively:

(6)   *Sy   is   aan   die   weg-gaan / Sy is anet weggaan*
         She is   at   the   away-go.INF
         'She is leaving'

(7)   *Ich   bin   am   schlaf-en*
     I   am at.the sleep-INF
    'I am sleeping'

The word combination *an-et* in Afrikaans has developed into a progressive marker, and the bound determiner *-et* 'the' only occurs in this context (Coenradi, p.c.).

The rise of this type of progressive marker can be explained by means of the method of reconstruction, based on two types of evidence: cross-linguistic comparison, and the study of related expressions within individual languages. First, the fact that this type of grammaticalization occurs in so many not necessarily genetically related languages makes it plausible that a general cognitive mechanism is involved: the metaphorical use of spatial expressions for referring to temporal notions. Secondly, in a language like Dutch we have prepositional phrases of the form *aan het N* with a regular, compositional interpretation, besides prepositional phrases beginning with the progressive marker *aan het*, although we should observe that this use of *aan* in present-day Dutch is restricted, as we saw above. A simple example of such a locative use of *aan* is a sentence like *Het huis staat aan de gracht* 'The house stands /is situated on the canal'. If we want to make sense of these two uses of the *aan het*-PP we should relate them in terms of grammaticalization.

Strictly speaking, this type of evidence is not diachronic evidence. The reconstructed development should be checked by the careful inspection of the available historical data (Newmeyer 1998: 279). In this paper, however, I will not present such evidence concerning the rise of the Dutch progressive constructions because I want to focus on another aspect of grammaticalization: how does the rise of such a construction affect the synchronic grammar of a language, and what does its existence imply for our conception of the architecture of the grammar. In particular, I will argue that the notion "constructional idiom" is essential for a proper account of the impact of grammaticalization on a synchronic grammar.

In a number of recent publications (for instance, Nattinger and DeCarrico 1992; Goldberg 1995, 2006; Jackendoff 1977, 2002; Wray 2002), attention has been drawn to the existence and theoretical implications of multi-word expressions that are idiomatic in nature, but not completely fixed because some of the positions in these expressions are variable. For instance, in the idiomatic expression *a*+Noun (time) *ago* the position of the noun can be filled by all nouns with a temporal interpretation, words such as *minute, hour*, and *day*. Such expressions with variable positions must be stored and are referred to as "constructional idoms" (Jackendoff 1977, 2002), or as "lexical phrases with a

generalized frame" (Nattinger and DeCarrico 1992: 36). The construction also allows for nouns that are not inherently temporal, for instance *grief* as in Dylan Thomas' *a grief ago* (an example provided to me by Nigel Vincent). In this latter case we see the effect of type coercion: in this construction the word *grief* has to be interpreted as a time expression because it occurs in the position of the time noun. In this article I will discuss one specific constructional idiom of Dutch, the progressive construction for verbs of the form *aan + het + infinitive* introduced above. In section 2, I will present an outline of the properties of this construction. It will be made clear that the *aan het INF* sequences occur with a number of verbs besides *zijn* 'to be'. Section 3 deals with the role of the progressive construction in triggering incorporation. In section 4, it is shown how the notion 'inheritance tree' can be used to account for the regular aspects of this particular construction and its instantiations. In section 5, I will argue that the *aan het INF*-construction may be seen as a case of periphrasis, since it interacts with the use of morphological means to express progressive aspect. Section 6 presents a summary of conclusions.

2.   The *aan het* + INFINITIVE construction

Let us have another look at example (2) repeated here for convenience:

(2)   *Jan   is   aan   het   fiets-en*
        John is   at   the   cycle-INF
        'John is cycling'

The formal structure of the part *aan het fietsen* is that of a PP headed by the preposition *aan*, and followed by an NP complement, consisting of the neuter singular determiner *het* 'the' followed by the infinitive *fietsen* 'to cycle'. This type of constructional idiom is thus canonical in that it follows the rules of Dutch syntax: it has the form of a PP, and PPs can be used as predicates in sentences with the verb *zijn* 'to be' as their main verb. Nevertheless, the *aan*-PP needs to be listed as such because the progressive meaning of this *zijn + PP* sequence cannot be derived compositionally from the meaning of its parts. There is no general principle of interpretation that predicts the progressive interpretation of locative prepositions combined with durational or process nouns. For instance, a sentence like *We zijn aan de wandeling* 'We are at the walk-ing' (with the well-formed process noun *wandeling* 'walk') does not allow for a progressive interpretation (and cannot be used in Dutch anyway), unlike *We zijn aan het wandelen* 'We are walking'.

As the gloss of sentence (2) indicates, the *aan*-PP in combination with *zijn* 'to be' functions as the equivalent of the English progressive form. The Dutch progressive construction is restricted as to the kind of verbs it allows: the verb should be an activity or an accomplishment verb (that is a durational verb); stative and achievement verbs are excluded:

(8)   *Jan is aan het wonen in Amsterdam* (state)
       'lit. John is living in Amsterdam'
       Jan is aan het fietsen (durational event, activity)
       'John is cycling'
       Jan is de appel aan het eten (telic event, accomplishment)
       'John is eating the apple'
       **Jan is de finish aan het bereiken* (punctual event, achievement)
       'lit. John is reaching the finish'

In fact, the classical division of four aspectual classes in Vendler (1967) is partially based on their (in)compatability with the progressive construction.

    As noted by Boogaart (1999: 175), there is a difference between Dutch and English in that Dutch completely excludes the use of stative verbs in its progressive construction, whereas English allows for stative stage-level predicates, as in:

(9)   She was living in London at the time

Additional restrictions on the Dutch progressive observed by Boogaart (1999: 187ff.) that do not hold for English are that it cannot be used in the passive voice, nor with a habitual meaning:

(10)   *De krant was aan het lezen geworden*
        'The paper was being read'
        **Vroeger waren ze altijd aan het ontbijten in de keuken*
        'Formerly, they were always having breakfast in the kitchen'

In English, the habitual meaning is possible with adverbs such as *forever* or *always* (Nigel Vincent, pers. comm..). As pointed out by Depraetere (1995) and Bogaart (1999), there is no incompatibility between the use of the progressive form and telic events, that is events with an inherent endpoint: we must distinguish between (a) telicity which has to do with the presence of potential endpoints and is a case of Aktionart, and (b) (un)boundedness, which has to do with the presence of actual temporal boundaries and is a matter of aspect. Progressive / non-progressive is an aspectual distinction that often establishes

an unbounded reading, that is a reading without temporal boundaries, as is the case in sentence (2). The *aan het* + INF-construction in combination with the verb *zijn* 'to be' clearly requires an event with duration.

The use of the *aan het* + INF-construction is not restricted to combinations with the verb *zijn* 'to be'. In fact, it combines with a number of other verbs. The data presented here are taken partially from the *Algemene Nederlandse Spraakkunst* (Haeseryn et al. 1997: 1050ff.), and are partially based on intuitions of the author who is a native speaker of Dutch (and checked with other native speakers). First, the *aan het* + INF-construction functions as a predicate with a progressive meaning in combination with (A) verbs of appearance, (B) accusativus-cum-infinitivo-verbs, (C) verbs that take a secondary predicate, (D) inchoative and continuative verbs, and (E) causative verbs.

A. with verbs of appearance such as *blijken* 'to seem/appear', *lijken* 'to seem', *schijnen* 'to seem':

(11) *Hij bleek   aan het schilder-en*
     He   seemed/appeared at   the paint-INF
     'He seemed/appeared to be painting'

(12) *Hij lijkt   aan het verander-en*
     He   seems   at   the change-INF
     'He seems to be changing'

(13) *Ze   scheen   weer aan het strijk-en*
     She seemed   again at   the iron-INF
     'She seemed to be ironing again'

The use of the *aan het* + INF-construction with verbs of appearance indicates that the construction functions as a predicate; it follows the rules of Dutch syntax in that such verbs combine with similar kinds of PPs that attribute a property, that is, with a non-locational interpretation; compare:

(14) *Jan   bleek   in de   war*
     John seemed/appeared in the knot
     'John seemed/appeared to be confused'

B. with the accusativus-cum-infinitivo-verbs *horen* 'to hear', *zien* 'to see', *vinden* 'to find':

(15) *We hoorden hem aan het rommel-en   op zolder*
     We heard   him at   the potter-INF   in the attic
     'We heard him pottering around in the attic'

(16) *Ik zag haar aan het wied-e   in de tuin*
     I   saw her   at   the weed-INF in the garden
     'I saw her weeding in the garden'

(17) *Ze   vonden hem aan het debatter-en met zijn vrienden*
     They found   him at   the debate-INF   with his   friends
     'They found him debating with his friends'

The latter three examples show that the *aan het* + INF-construction can function as the predicate of the complement of *aci*-verbs.

C. With the verbs *hebben* 'to have' and *houden* 'to keep', which take secondary predicates:

(18) *Ik heb de motor weer aan het lop-en*
     I   have the engine again at   the run-INF
     'I have the engine running again'

(19) *Kun jij   die machine aan het draai-en houden?*
     Can you that engine   at   the run-INF   hold?
     'Can you keep that engine running?'

D. with the inchoative verbs *gaan* 'to go', *raken* 'to get', *slaan* 'to hit' and the verb *blijven* 'to continue':

(20) *Ze   gaan aan het discussiër-en*
     They go   at   the discuss-INF
     'They start discussing'

(21) *De twee partijen raakten aan het vecht-en*
     The two   parties got   at   the fight-INF
     'The two parties started fighting'

(22) *De matrozen sloegen aan het muit-en*
     The sailors   hit   at   the mutiny-INF
     'The sailors started mutinying'

(23) *De soldaten bleven aan het vecht-en*
     The soldiers kept   at   the fight-INF
     'The soldiers kept fighting'

E. with the causative verbs *brengen* 'to bring', *maken* 'to make', *krijgen* 'to get', *zetten* 'to put':

(24) *Jan   bracht   hem   aan   het   twijfel-en / *Jan bracht hem twijfelen*
      John   brought   him   at   the   doubt-INF
      'John made him doubting'

(25) *Dat   maakte   hem   aan   het   lach-en / *Dat maakte hem lachen*
      That   made   him   at   the   laugh-INF
      'That made him laughing'

(26) *De   politie   kreeg   hem   aan   het   prat-en / *De politie kreeg hem*
                                                            praten
      The   police   got   him   at   the   talk-INF
      'The police got him talking'

(27) *Deze   gebeurtenis   zette   hem   aan   het   denk-en / *Deze gebeurtenis*
                                                            zette hem denken
      This   event   put   him   at   the   think-INF
      'This event made him thinking'

The inchoative verbs *gaan* and *slaan* must be specified as having this specific inchoative meaning in combination with the *aan het* + INF-construction only; other PP-predicates or predicates in general cannot be used with these verbs:

(28) a. **Ze   gaan   in   de   war*
          They   go   in   the   knot
          'They get confused'
      b. **Ze   gaan   rijk*
          They   go   rich
          'They become rich'

(29) a. **De   matrozen   sloegen   in   de   war*[1]
          The   sailors   hit   in   the   knot
          'The sailors got confused'
      b. **De   matrozen   sloegen   ziek*
          The   sailors   hit   ill
          'The sailors got ill'

The inchoative verb *raken* and the causative verbs mentioned above, however, do combine with predicates of different types, including predicates of the PP-form:

(30) *De   partijen   raakten   in   de   war*
      The   parties   got   in   the   knot
      'The parties got confused'

(31)   *Dat   maakt   hem   in   de   war*
  That   made   him   in   the   knot
  'That made him confused'

On the basis of these observations, I conclude that Dutch has a constructional idiom *aan het* + INF with the meaning 'durational event'. This constructional idiom in its turn forms part of a number of idioms of the type *aan het* INF Verb (the position of the verb after the infinitive in this schema reflects the underlying SOV-order of Dutch), in which the position of Verb is occupied by one of a closed set of verbs, such as *gaan* and *slaan*. This shows that the notion construction has to be conceived of as a recursive pattern with a hierarchical organisation. It then has to be specified that, for instance, *gaan* and *slaan* have an inchoative meaning in this specific combination. The most straightforward way of representing this information is the assumption of constructional idioms '*aan het* INF *gaan*' and '*aan het* INF *slaan*'. Thus, it is accounted for that *slaan* can only be used as an inchoative verb in combination with the *aan het* + INF-construction. This means that constructional idioms may form part of larger idiomatic constructions.

  The verb *gaan* 'to go' can also be used as an inchoative verb in combination with a verbal infinitive, as in:

(32)   *Zij   gaan   discussiër-en*
  They   go   discuss-INF
'They start a discussion'

There is a subtle semantic difference between this sentence and sentence (20). Sentence (20) expresses the start of an event with some duration, whereas sentence (32) only expresses that an event will begin. More generally, the progressive construction does not have the same distribution as a simple infinitive, since most of the verbs mentioned above that combine with the *aan het* + INF-construction do not combine with a verbal infinitive, unlike *gaan*:

(33)   *De twee partijen raakten *vechten / aan het vechten*
  'The two parties started fighting'
  *De matrozen sloegen *muiten / aan het muiten*
  'The sailors started mutinying'
  *Jan bracht hem *twijfelen / aan het twijfelen*
  'John made him doubt'
  *Dat maakte hem *lachen / aan het lachen*
  'That made him laugh'
  *De politie kreeg hem *praten / aan het praten*
  'The police got him talking'

Deze gebeurtenis zette hem *denken / aan het denken
'This event made him thinking'
Ik heb de motor weer *lopen / aan het lopen
'I have the engine running again'
Kun jij die machine *draaien / aan het draaien houden?
'Can you keep that engine running?

There are two ways of accounting for the specific use of these verbs in this progressive construction. One option is providing these verbs with a subcategorization frame for the *aan het* + INF-construction, and assigning the inchoative meaning of, for instance, the verb *gaan* to the relevant subentry for *gaan*. The alternative is listing constructional idioms such as *aan het* INF *gaan* in the lexicon. The advantage of the latter approach is that it directly expresses the fact that the use of *gaan* as an inchoative verb is linked to the use of an *aan*-PP as a progressive construction.

A remarkable property of the *aan het* + INF-construction with *zijn* and some other verbs is that it inherits the syntactic valence of the verb that appears in the infinitival form. For instance, if the verb allows for a direct or prepositional object, this is also possible with the *aan het* + INF construction.

(34) a. *Jan is de aardappels aan het schill-en*
         John is the potatoes   at   the peel-INF
         'John is peeling the potatoes'
    b. *De kinderen zijn de boeken aan het lez-en*
         The children are the books at   the read-INF
         'The children are reading the books'
    c. *Hij is zijn geld   aan het op-mak-en*
         He is his money at   the up-make-INF
         'He is using up his money'
    d. *Jan is naar de papieren aan het zoek-en*
         John is for   the papers at   the look-INF
         'John is looking for the papers'
    e. *Jan is op zijn vader aan het wacht-en*
         John is for his father at   the wait-INF
         'John is waiting for his father'

Note that the direct and prepositional objects do not appear directly before the verb to which they belong, but before the *aan*-PP. There is a similarity here with the infinitival particle *te* 'to' that also separates objects from the verb:

(35) *Jan   belooft   de   aardappels   te   schill-en*
      John   promises   the   potatoes   to   peel-INF
      'John promises to peel the potatoes'

The *aan het* + INF-construction has this external valence in combination with the verb *zijn* 'to be', but also with the other verbs that induce a progressive interpretation such as the verbs of appearance, the aci-verbs, and the verb *blijven* 'to keep'. The use of inchoative verbs in combination with a direct or prepositional object, on the other hand, leads to ungrammatical sentences:

(36) a. *Jan   bleek   de   appels   aan   het   schill-en*
          John   appeared   the   apple   at   the   peel-INF
          'John appeared peeling the apples'
      b. *Hij   bleef   de   boeren   aan   he   bedrieg-en*
          He   kept   the   farmers   at   the   cheat-INF
          'He kept cheating the farmers'
      c. *Ik   zag   hem   naar   de   papieren   aan   het   zoek-en*
          I   saw   him   for   the   papers   at   the   look-INF
          'I saw him looking for the papers'
      d. **Hij   ging   de   kinderen   aan   het   wass-en*
          He   went   the   children   at   the   wash-INF
          'He started washing the children'
      e. **Hij   kreeg   de   kinderen   fruit   aan   het   et-en*
          He   got   the   children   fruit   at   the   eat-INF
          'He got the children eating fruit'

The infinitival verb in the *aan het* + INF construction does not exhibit the normal projection potential of a verbal infinitive within the *aan het*-PP. Verbal infinitives in Dutch can either be preceded by an NP or PP argument, which reflects their verbal nature, or followed by a PP-complement, which reflects that the verbal infinitive is simultaneously nominal in nature (cf. 38). However, this syntactic valence of verbal infinitives is not available in the *aan het* + INF-construction. For instance, of the following sentences, only the first is grammatical:

(37) a. *Hij   is   de   appel   aan   het et-en*
          He   is   the   apple   on   the   eat-INF
          'He is eating the apple'
      b. **Hij   is   aan   het   de   appel   et-en*
          He   is   at   the   the   apple   eat-INF
          'He is eating the apple'

c. *Hij is aan het et-en   van de appel*
He   is   at   the   eat-INF of   the apple
'He is eating the apple'

Compare other cases of the use of infinitives as the heads of NPs; in these cases the infinitive does allow for a pre-verbal or a post-verbal complement:

(38) *Het naar de oplossing zoek-en   kostte veel   tijd*
The   for   the solution   search-INF took   much time
'Searching for the solution took a lot of time'
Het et-en   van appels is gezond
The   eat-INF of   apples is healthy
'Eating apples is healthy'

These observations show that in the *aan het* + INF construction the infinitive has become the main verb, whereas the word sequence *aan het* functions as a grammatical marker of progressive aspect, in combination with a finite form of *zijn* 'to be' or a verb of appearance. This conclusion is supported by the observations that adverbs also appear before *aan het*, not directly before the verb:

(39) *De   jongens waren hard aan het fiets-en / *aan het hard fiets-en*
The   boys   were   fast   at   the   cycle-INF/at   the   fast   cycle-INF

Thus, the *aan het* + INF form functions as the progressive form of the verb, and arguments and modifiers cannot come in between these slots.

3.   Quasi-incorporation

The V in *aan het* + INF construction can be a so-called separable complex verb, that is, a verb preceded by a particle, a generic noun, or a bare adjective that functions as a lexical unit (Booij 2002a,b). Therefore, the progressive construction can be used to determine the lexical unit status of complex predicates. As shown below, the infinitive may be separated from the *aan het* sequence by a generic object (40, 41, 42a), an adjective, or a particle:

(40) *With generic objects*
Ik   ben aan het thee zett-en[2]
I   am   at   the   tea   make-INF
'I am making tea'

(41)   *De   kinderen waren aan het sneeuwballen gooi-en*
       The children   were   at   the snowballs   throw-INF
       'The children were throwing snowballs'

(42)   a.   *Ze zijn aan het brieven schrijv-en*
       They are still at   the letter   write-INF
       'They are still writing letters'
       b. **Ze   zijn aan het lange brieven schrijv-en*
          They are   at   the long   letters write-INF
          'They are writing long letters'
       c. *Ze   zijn lange brieven aan het schrijv-en*
          They are   long   letters at   the write-INF
          'They are writing long letters'

In these examples, the nouns *thee*, *sneeuwballen* and *brieven* function as the left, non-verbal constituents of separable complex verbs. These N-V combinations mention conventionalized activities such as making tea, throwing snowballs, and writing letters. In the case of *thee zetten*, the noun is a mass noun, in the other two examples the noun appears in the plural form, and these plural forms receive a generic interpretation. In this use, these nouns are non-projecting, in line with what we observed above for the verb in the *aan het* + INF-construction: as soon as we modify such nouns, they have to appear before the *aan het* + INF-construction (cf. Booij 2002c; Toivonen 2003 for a discussion of non-projecting words). That these word combinations function as lexical units is also suggested by the fact that they can feed word formation. For instance, we can coin deverbal agent nouns such as *theezetter* 'tea-maker', *sneeuwballengooier* 'snowball thrower', and *brievenschrijver* 'letter writer'.

Similar observations can be made for separable A V combinations such as *schoonmaken* 'to clean' and *witwassen* 'to white-wash':

(43)   a. *Ze   was fruit aan het schoon mak-en*
          She was fruit at   the clean   make-INF
          'She was cleaning fruit'   l
       b. **Ze was aan het fruit schoon mak-en*
          She was at   the fruit clean-make-INF
          'She was cleaning fruit'
       c. **Ze was aan het schoon mak-en van fruit*
          She was at   the clean make-INF of   fruit
          'She was cleaning fruit'

(44) a. *Jan   was geld   aan het wit   wass-en*
      John   was money at   the white wash-INF
      'John was laundering money'

   b. **Jan was geld   wit   aan het wass-en*
      John was money white at   the wash-INF
      'John was laundering money'

   c. **Jan was aan het geld   wit   wass-en*
      John was at   the money white wash-INF
      'John was laundering money'

   d. **Jan was aan het wit   wass-en van geld*
      John was at   the white wash-INF of   money
      'John was laundering money'

In the case of *wit wassen* it is the metaphorical meaning that is the only possible one, since this is the conventionalized meaning of this word sequence. Therefore, it can only be interpreted structurally as a separable verb, hence the ungrammaticality of **Jan was geld wit aan het wassen*.

The third category of word combinations that appear after *aan het* in the progressive construction, are particle verbs:

(45) a. *Hij is zijn moeder aan het op bell-en*
      He   is his   mother at   the up call-INF
      'He is phoning his mother'

   b. **Hij is zijn moeder op aan het bell-en*
      He   is his   mother up   at   the call-INF
      'He is phoning his mother'

   c. **Hij is aan het zijn moeder op bell-en*
      He   is at   the his   mother up call-INF
      'He is phoning his mother'

   d. **Hij is aan het op bell-en van zijn moeder*
      He   is at   the up call-INF of   his   mother
      'He is phoning his mother'

(46) a. *Ze   was de kinderen aan het uit lach-en*
      She was the children at   the out laugh-INF
      'She was laughing at the children'

   b. **Ze was de kinderen uit aan het lach-en*
      She was the children out at   the laugh-INF
      'She was laughing at the children'

    c. **Ze   was   aan   het   de   kinderen   uit   lach-en*
       She   *was   at*   the   the   children   out   laugh-INF
       'She was laughing at the children'
    d. **Ze   was   aan   het   uit   lach-en   van   de   kinderen*
       She   was   at   the   out   laugh-INF   of   the   children
       'She was laughing at the children'

In conclusion, verbs do not take normal syntactic complements when they occur in the INF position of the *aan het* + INF-construction. However, the verb may combine with a particle, an adjective or a generic NP (a noun) into a complex predicate that is allowed in the INF position. In other words, we find here the three kinds of complex predicates that function as lexical units of Dutch: verbs preceded by a noun, an adjective or a particle (cf. Booij 2002a, 2002b). Thus, we can use the *aan het* + INF-construction as a standard test for the status of 'separable complex word' of a word sequence of the type N-V, A-V, and Preposition/Adverb-V.

    These are all cases of what Dahl (2004: Chapter 10) refers to as quasi-incorporation: this type of word combination looks as the creation of compounds through incorporation, but such combinations are not compounds in the strict sense since they can be separated in certain syntactic environments. In the case of Dutch, the non-verbal part is stranded in root clauses, whereas the verb itself in its finite form moves to the second position of its clause, as illustrated in (47):

(47)   *Ik et thee*
       'I make tea'
       Hij wast het geld wit
       'He launders the money'
       Hij bel zijn moeder op
       'He phones his mother'

Therefore, these types of word sequences are to be seen as idioms. If a particular pattern is productive, as it is the case for a number of types of particle verbs, such a pattern can be qualified as a constructional idiom in which the first slot is lexically fixed, but the position for the verb is an open slot, that is, a variable.

    The incorporating power of the progressive construction manifests itself also in the fact that plural nouns can also be incorporated, as long as they have a generic, non-referential interpretation, as in *brieven schrijven* 'lit. letters write', *aardappels schillen* 'lit, potatoes peel' and *bonen plukken* 'lit. beans pick':

(48) *Wij   zijn   aan   het   brieven   schrijven / aardappels   schillen / bonen   plukken*
     We   are   at   the   letters-write-INF / potatoes   peel-INF / beans   pick-INF
     'We are letter-writing / potato-peeling / bean-picking'

Again, these cases of incorporation mention institutionalized actions, and the plural nouns have a generic interpretation.

Some word sequences allow for both a purely syntactic and a constructional idiom analysis. For instance, in the word sequence *af maken* 'to finish' the predicate *af* 'ready' can be analysed as the left part of a separable complex word, or as a secondary predicate. The second option is possible because the word *af* can function as an independent predicate, as in *Het boek is* af 'The book is ready'. In that case, the sequence *af maken* is derived syntactically. The option of a syntactic analysis explains why we can have *af* either within (complex predicate analysis) or before (syntactic analysis) the *aan het* + INF-construction:

(49) a. particle verb interpretation:
          Ze   was   het boek aan het af   maken
          She   was   the book at   the ready make-INF
          'She was finishing the book'
      b. secondary predicate interpretation:
          Ze   was   het boek af   aan   het maken
          She   was   the book ready   at   the make-INF
          'She was finishing the book'

Note that, as expected, splitting of the particle verb is impossible for non-resultative particles. Words such as *na* and *door* do not express a property. Hence, they do not allow for a syntactic analysis with a secondary predicate status for the particle:

(50) *Ze   waren   aan   het   na-tafel-en*
      They   were   at   the   after-table-INF
      'They were lingering at the dinner-table'
      *Ze waren na ann het tafelen

(51) *Ze   waren   aan   het   door-werk-en*
      They   were   at   the   through-work-INF
      'They were working on'
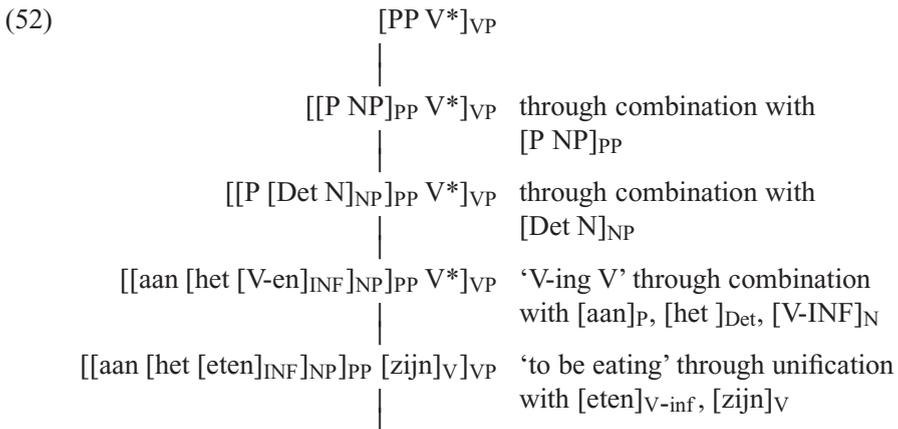   **Ze waren door aan het werken*

These observations once more show that the *aan het* + INF-construction can be used for determining if a word sequence is a separable complex verb.

4.   Inheritance trees

As we saw above, the *aan het* + INF-constructions, and these constructions combined with an additional verb such as *zijn* 'to be' and *gaan* 'to go', are constructional idioms with a number of unpredictable properties. Yet, they also have a number of canonical properties since they are in accordance with the syntactic rules of Dutch. These regularities can be expressed in an inheritance tree in which the lower nodes inherit the properties of higher nodes in the tree, but may also have their own unpredictable properties (Goldberg 1995). The properties of higher nodes are inherited by default, and a default property can be overridden by another specification for the relevant parameter on the lower node. These trees might be assumed to form part of the "construction" of a language in the sense of Goldberg (1995, 2006) and Jackendoff (2002).

There are two basic relations in an inheritance tree: 'instantiation' and 'part of'. An instantiation of a more general pattern is obtained by unifying the general pattern with more specific information such as lexical items. For instance, the pattern *aan het et-en* is an instantiation of the pattern *aan het* + INFINITIVE obtained through the unification of this pattern and the lexical information that *eten* is an infinitive. The three words *aan, het,* and *eten* exhibit a part-of relation with respect to the word sequence *aan het eten*.

The inheritance tree for the phrase *aan het eten zijn* 'to be eating' can be represented as follows:

(52) $[\text{PP V*}]_{\text{VP}}$

                                        $|$

                     $[[\text{P NP}]_{\text{PP}} \text{ V*}]_{\text{VP}}$ through combination with
                                                             $[\text{P NP}]_{\text{PP}}$
                                        $|$

                 $[[\text{P } [\text{Det N}]_{\text{NP}}]_{\text{PP}} \text{ V*}]_{\text{VP}}$ through combination with
                                                             $[\text{Det N}]_{\text{NP}}$
                                        $|$

            $[[\text{aan } [\text{het } [\text{V-en}]_{\text{INF}}]_{\text{NP}}]_{\text{PP}} \text{ V*}]_{\text{VP}}$ 'V-ing V' through combination
                                                             with $[\text{aan}]_{\text{P}}$, $[\text{het }]_{\text{Det}}$, $[\text{V-INF}]_{\text{N}}$
                                        $|$

         $[[\text{aan } [\text{het } [\text{eten}]_{\text{INF}}]_{\text{NP}}]_{\text{PP}} [\text{zijn}]_{\text{V}}]_{\text{VP}}$ 'to be eating' through unification
                                                             with $[\text{eten}]_{\text{V-inf}}$, $[\text{zijn}]_{\text{V}}$
                                        $|$

Each next lower node in the hierarchy is an instantiation of the higher node in which more specific information is filled in (the unification of the construction with smaller constructions or lexical items). The only additional idiosyncratic information is the specific progressive interpretation of this construction spec-

ified at the fourth level where this specific interpretation applies. Individual instantiations of this progressive construction will be stored lexically if they are established and have a certain frequency of use.

The symbol V* stands for verbs that consist of one word, and for separable complex verbs, that is multi-word units that function as verbs and contain a particle, a generic noun, or an adjective, the cases of quasi-incorporation discussed above. The lexicon may also specify the subtemplates and the established instantiations of these multi-word V*'s (cf. Booij 2002a; 2002b).

An additional idiosyncratic property of this construction is the transfer of the Predicate Argument Structure (PAS) of the verb (in its infinitival form) to that of the progressive construction as a whole, when used in combination with *zijn,* the verbs of appearance, and *aci*-verbs. Recall that direct and prepositional objects of the verb (in its infinitival form) appear before the word sequence *aan het* and not directly before the verb. As we saw above, this transfer of valence does not take place with inchoative and causative verbs (the D- and E-verbs listed above). This transfer of syntactic valence must somehow be expressed as well in a proper account of this progressive construction. Transfer is different from the inheritance referred to above, in that in the case of transfer properties are not passed on directly from a node to a subnode in the tree, but from or to a specific subpart. This form of transfer is well known from studies of derivational morphology, and often referred to as "inheritance". For instance, de-verbal nouns in English and Dutch may inherit the Predicate Argument Structure of their verbal base, as in *the destruction of the city by the Romans*, an NP in which the Agent and the Theme of the verbal base *destroy* are realized within the NP. I will leave the issue of the proper formalization of such transfer phenomena in an inheritance tree framework for future research.

5.   The periphrastic role of the *aan het* + INF-construction

As stated above, the main aim of this paper is to discuss how the rise of constructional idioms as grammatical markers affects the grammar of a language. In this section, I will try to show that the existence of multi-word constructional idioms may have an effect on the morphological system of a language, and hence can be said to have acquired a periphrastic function.

In the inflectional domain, it is quite clear that we need the theoretical concept of periphrasis, that is, the expression of inflectional information by means of a combination of words in case there is no synthetic form available to express a particular array of morpho-syntactic features. Periphrastic constructions are the prototypical cases of analytic lexical expressions.

The notion 'periphrasis' can also be used in a looser sense, namely for the analytic expression of information in a language that is expressed morphologically in other languages (Haspelmath 2000). This applies to the expression of information with respect to voice, aspect, Aktionsart, etc. This kind of analytic expression is a widespread property of natural languages, as is also clear from the grammaticalization studies in Bybee and Dahl (1989), and Bybee, Perkins, and Pagliuca (1994). It is the very phenomenon of grammaticalization that makes us expect to find such patterns of analytic expression of grammatical information: lexical words can develop into grammatical words (and these in their turn may subsequently develop into bound grammatical morphemes).

The *aan het* + INF-construction discussed in this paper appears to be periphrastic in this latter sense since there are no synthetic verbal forms available that express progressive aspect and that can be used in predicative position. Dutch has present participles that receive a progressive interpretation, but these present participles can only be used in an attributive position:

(53)   *De fietsende man*
       'The cycling man'
       *De man is *fietsend / aan het fietsen*
       'The man is cycling'

This example shows that the *aan het* + INF-construction functions as a periphrastic form of verbs in order to express progressive aspect in predicate position. This also applies to the other verbs with which this *aan het* + INF construction can be combined:

(54)   *Mijn moeder blijkt *fietsend/ aan het fietsen*
       'My mother appears to be cycling'
       *We zagen hem *fietsend / aan het fietsen*
       'We saw him cycling'
       *We gingen *fietsend / aan het fietsen*
       'We started cycling'

Present participles in Dutch (with the form verbal stem + suffix *end*) still have a full verbal potential even when used as adjectives in attributive position (with an inflectional ending *-e* added in attributive position). In predicate position, however, it is the *aan het* + INF-construction that has this full verbal potential:

(55)   *De zijn vader beledig-end-e jongen*
       the his father insult-ing   boy
       'the boy insulting his father'

*De jongen is zijn vader beledig-end
The boy   is his   father insult-ing
'The boy is insulting his father'

De jongen is zijn vader aan het beledigen
The boy   is his   father at   the insult-INF
'The boy is insulting his father'

Note that there are adjectives with the form of present participles that can be used in predicative position such as *schokk-end* 'shocking', *woed-end* 'lit. raging, angry', and *lop-end* 'lit. walking, on foot', as in:

(56)   *Deze opmerking is schokkend*
      'This remark is shocking'
      Mijn moeder was woedend
      'My mother was angry'
      Ze zijn lopend
      'They are on foot'

However, these are all lexicalized cases of present participles with an unpredictable meaning that function as adjectives. They cannot be used in predicative position in their literal interpretation.

    The periphrastic role of the *aan het* + INF-construction extends to infinitival compounds with a defective paradigm such as the following:

(57)   *mast-klimm-en*
      pole climb-INF
      'pole climbing'

      hard-lop-en
      fast walk-INF
      'fast walking'

      wedstrijd-zwemm-en
      competition swim-INF
      'competition swimming'

      wad-lop-en
      shallow walk-INF
      'shallow-walk'

> *zee-zeil-en*
> sea sail-INF
> 'sea-sailing'

These compounds all denote an activity and have the special property that they have no finite forms in main clauses[3]. Instead, it is possible to use the *aan het* + INF construction. The progressive interpretation imposed by this construction is in accordance with the fact that these verbs are all activity verbs.

(58)   *Jan *mastklimt / is aan het mastklimmen*
        'John is pole-climbing'
        Mijn vader *zeezeilt / is aan het zeezeilen
        'My father is sea-sailing'

These observations on the *aan het* + INF-constructions make it clear that they function as periphrastic expressions, and thus interact with the morphology in the sense that they function as alternatives to the morphological expression of pieces of information. In the case of the present participles we may hypothesize that the rise of the *aan het* + INF-construction has blocked the predicative use of regular present participles. However, this hypothesis, plausible though it may be, requires detailed historical research and substantial diachronic evidence.

In sum, constructional idioms with a periphrastic function may restrict the use of the morphological possibilities of a language. In the case of the infinitival compounds, the existence of a periphrastic construction has it made possible to use these compounds nevertheless in sentences where finite verbal forms are required.

6.   Conclusions

The detailed analysis of the Dutch progressive *aan het* + INF-construction presented above has demonstrated that the notion 'constructional idiom' enables us to give a proper account of productive multi-word combination patterns, some of which serve as alternatives to the morphological expression of lexical and/or grammatical content. Such constructional idioms arise through the process of grammaticalization. The notion 'constructional idiom' is crucial for an insightful account of patterns of grammaticalization. Grammaticalization can be qualified as the rise of specific constructional idioms from more general syntactic patterns, with the effect that grammatical items (in this case the preposition *aan* and the determiner *het*) become even more grammatical since they function as

specific markers of the progressive when combined with the infinitival form of verbs.

It is clear that the rise of this constructional idiom is a matter of grammaticalization, not of lexicalization. The construction functions as a progressive marker and hence as a grammatical marker, and has become productive, whereas the use of *aan* as a preposition is normally subject to strong lexical restrictions. This conclusion is in line with the criteria for distinguishing between lexicalization and grammaticalization in Brinton and Traugott (in press).

The effect of the grammaticalization of constructions can be accounted for in a conception of the grammar with inheritance trees for syntactic patterns. The basic advantage of such trees is that generalizations can be made at different levels of abstraction. Hence, constructional idioms can still be related to the more general syntactic patterns from which they arose and with which they may still share some properties.

Notes

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1. The verb *slaan* can, however, be combined with the PP *op de vlucht*, with the meaning 'to start fleeing' but this is a fully fixed idiom.

2. A note on the orthography of complex predicates is in order here. In Dutch orthography, complex predicates such as *thee zetten* 'to make tea', *schoon maken* 'to clean', *wit wassen* 'to white-wash' and *op bellen* ' to phone' are written as one word, without internal spacing, which reflects their status as established lexical units. In the sentences above, I did not follow this Dutch orthographical convention, in order not to prejudge the analysis.

3. A finite form such as *mastklimt* does occur in embedded clauses, when the two constituents are not separated through the rule of Verb Second which puts finite verbs in second position in main clauses (cf. Booij 2002a: 39). Cf. Vikner (2005) for an extensive discussion of this phenomenon in Germanic languages.

References

Bertinetto, Pier-Marco, Karen H. Ebert and Casper de Groot
    2002   The progressive in Europe. In: Östen Dahl (ed.), *Tense and aspect in the languages of Europe*, 517–558. Berlin: Mouton de Gruyter.

Boogaart, Ronny
    1999   *Aspect and temporal ordering*: *A Contrastive Analysis of Dutch and English*. Utrecht: LOT.

Booij, Geert
    2002a   Separable complex verbs in Dutch: A case of periphrastic word forma-
                tion. In: Nicole Dehé, Ray Jackendoff, Andrew McIntyre and Silke Ur-
                ban (eds.), *Verb-Particle explorations*, 21–41. Berlin/New York: Mou-
                ton de Gruyter.

Booij, Geert
    2002b   *The morphology of Dutch*. Oxford: Oxford University Press.
    2002c   Constructional idioms, morphology, and the Dutch lexicon. *Journal
                of Germanic Linguistics* 14: 301–329.

Brinton, Laurel J. and Elizabeth Closs Traugott
    2007   Lexicalization and grammaticalization all over again. In: Joseph C.
                Salmons and Shannon Dubenion-Smith (eds.), *Historical Linguistics
                2005: Selected Papers from the 17th International Conference on His-
                torical Linguistic, Madison, Wisconsin, 31 July – 5 August 2005,* 3–19.
                Amsterdam/Philadelphia: John Benjamins.

Bybee, Joan and Östen Dahl
    1989   The creation of tense and aspect systems in the languages of the world.
                Studies in Language 13: 51–103.

Bybee, Joan, Revere Perkins, and William Pagliuca
    1994   *The evolution of grammar. Tense, aspect, and modality in the languages
                of the world*. Chicago/London: The University of Chicago Press.

Depraetere, Ilse
    1995   On the necessity of disinguishing between (un)boundedness and
                (a)telicity. *Linguistics and Philosophy* 18: 1–19.

Dahl, Östen
    2004   *The growth and maintenance of linguistic complexity*. Amster-
                dam/Philadelphia: John Benjamins.

Dyk, Sybren
    1997   *Noun incorporation in Frisian*. Ljouwert: Fryske Akademy. Disserta-
                tion, University of Groningen

Ebert, Karen H.
    2000   Progressive markers in Germanic languages. In: Östen Dahl (ed.),
                Tense and aspect in the languages of Europe, 605–653. Berlin: Mouton
                de Gruyter.

Goldberg, Adele
    1995   *Constructions: A construction grammar approach to argument struc-
                tures*. Chicago/London: The University of Chicago Press.
    2006   *Constructions at Work*. Oxford: Oxford University Press.

Haeseryn, Walter, Karin Romijn, Guido Geerts, Jaap de Rooy and Maarten van den Toorn
    1997   *Algemene Nederlandse Spraakkunst*. Groningen: Wolters Noordhoff.

Haspelmath, Martin
    2000   Periphrasis. In: Geert Booij, Christian Lehmann and Joachim Mugdan
                  (eds.), *Morphology: An international handbook on inflection and word
                  formation*, 655–664. Berlin: Mouton de Gruyter.
Heine, Bernd
    1993   *Auxiliaries: cognitive forces and grammaticalization*. New York: Ox-
                  ford University Press.
Heine, Bernd, Ulrike Claudi and Friederike Hünnemeyer
    1991   *Grammaticalization: A conceptual framework*. Chicago/London: The
                  University of Chicago Press.
Jackendoff, Ray
    1997   *The architecture of the language faculty*. Cambridge/Massachusetts:
                  MIT Press
    2002   *Foundations of language*. Oxford: Oxford University Press.
Krause, Olaf
    2002   *Progressiv im Deutschen: Eine empirische Untersuchung im Kontrast
                  mit Niederländisch und Englisch*. Tübingen: Niemeyer.
Kuteva, Tania
    2001   *Auxiliation*: *An enquiry into the nature of grammaticalization*. Oxford:
                  Oxford University Press.
Lemmens, Maarten
    2002   The semantic network of Dutch posture verbs. In: John Newman (ed.),
                  The linguistics of sitting, standing, and lying, 103–139. Amsterdam /
                  Philadelphia: John Benjamins.
Lemmens, Maarten
    2005   Aspectual posture verb constructions in Dutch. *Journal of Germanic
                  Linguistics* 17: 183–217.
Leys, Odo
    1985   De konstruktie *staan te* + infinitief en verwante konstrukties. *Verslagen
                  en mededelingen van de Koninklijke Akademie voor Nederlandse Taal-
                  en Letterkunde* 13(3): 265–277.
Nattinger, James R. and Jeannette S. DeCarrico
    1992   *Lexical phrases and language teaching*. Oxford: Oxford University
                  Press.
Newman, John (ed.)
    2002   *The linguistics of sitting, standing, and lying*. Amster-
                  dam/Philadelphia: John Benjamins.
Newmeyer, Frederick J.
    1998   *Language form and language function*. Cambridge,Massachusetts:
                  MIT Press.

Petré, Peter and Hubert Cuyckens (this volume) *Bedusted, yet not beheaded: The role of be-'s constructional properties in its conservation.*

Ponelis, Frits A.
1979   *Afrikaanse sintaksis*. Pretoria: J.L. van Schaik.

Sassen, Albert
1953   *Het Drents van Ruinen*. Assen: Van Gorcum.

Toivonen, Ida
2003   *Non-projecting words: A case study of Swedish particles*. Dordrecht: Kluwer.

Traugott, Elizabeth Close
2003   Constructions in grammaticalization. In: Brian Joseph and Richard Janda (eds.), *The Handbook of Historical Linguistics*, 624–647. Oxford: Blackwell.

Traugott, Elizabeth Close
(this volume) *The grammaticalization of NP of NP constructions*.

Van Pottelberge, Jeroen
2002   Nederlandse progressiefconstructies met werkwoorden van lichaamshouding: specificiteit en geschiedenis. *Nederlandse Taalkunde* 7: 142–174.

Vendler, Zeno
1967   *Linguistics in philosophy*. Ithaca: Cornell University Press.

Vikner, Sten
2005   Immobile complex verbs in Germanic. *The Journal of Comparative Germanic Linguistics* 8: 83–115.

Wray, Alison
2002   *Formulaic language and the lexicon*. Cambridge: Cambridge University Press.